

REMARKSAmendments

In the descriptive part of the specification, various minor errors have been corrected.

In the claims, claims 14 and 15 have been amended by incorporating the subject matter of claims 20 and 21, respectively, and claims 20 and 21 have been canceled. As a result, claims 14 and 15 now recite that the blowing agent is a microencapsulated blowing agent. In addition, these claims specify that the foamable coupling is shaped. Basis for this amendment is found in paragraph [0019] of the specification. In response to a restriction requirement, claims 32 and 33 have been withdrawn. As a result, claims 34 and 35 have been rewritten to include the language of withdrawn claims 32 and 33, respectively. New claims 40 and 41, specifying the shape of the coupling, have been added. Basis is found in paragraphs [0019] and [0046]. These amendments have been amended solely to more clearly define and recite the present invention. The amendments are not in any way related to the Examiner's rejection based on prior art or any applied or cited prior art.

The Rejection Under 35 USC § 103(a)

Applicants respectfully traverse the rejection of claims 14, 15, and 20-24 under 35 USC § 103(a) as unpatentable over either Japanese Publication No. 59-121764 (JP 59-121764) or German Publication No. 1958307 A (DE 1958307) in view of Klein (U.S. Patent No. 4,456,784), insofar as the rejection is applicable to the amended claims.

The present claims are directed to a method of securely affixing a glass lamp in a base by means of a shaped foamable coupling in order to form a lamp assembly. The coupling comprises an ethylene copolymer and at least one microencapsulated blowing agent. The coupling is placed around one end of the glass lamp or inside the base, the glass lamp is inserted into the base, and the base is heated to a sufficient temperature for a sufficient time to expand the coupling and securely affix the glass lamp in the base. The coupling is shaped, e.g. in the form of a ring, a C-shape, or rectangular-shaped strips. The presence of the microencapsulated blowing agent allows the foamed coupling to maintain its shape and adhesive nature for extended periods at relatively high temperature, e.g. 140°C for 2000 hours, as is required for applications involving lamps.

JP 59-121764 discloses the use of a foamable tape comprising a phenolic, epoxy or polyester resin and a blowing agent to secure a fluorescent tube or incandescent bulb to a

metal base. In order to secure the glass tube or bulb to the base, the foamable tape is wound around the end of the glass bulb, the bulb is placed in a base, and the resulting assembly is heated to 120°C to foam or expand the adhesive tape. In contrast to the present claims, the composition does not comprise an ethylene copolymer, which has good adhesive properties, and there is no teaching or suggestion of the advantages of using a microencapsulated blowing agent.

DE 1958307 discloses the use of a foamable putty to secure a gas-filled incandescent lamp to a base. The putty or cement is a conventional heat curable putty with a heat foaming additive comprising phenolic resin, hexamethylenetetramine, marble flour, and talc powder. The putty is spread in the upper edge of the lamp base, the lamp is placed in the base, and the base is heated so that the putty foams and fastens the glass lamp to the base. As with JP 59-121764, there is no teaching or suggestion of the advantages of using a specific type of polymer or a microencapsulated blowing agent, and certainly no suggestion of using a shaped coupling.

The deficiencies of either of these documents are not resolved by the addition of Klein. Klein discloses the use of a foamable cylindrical barrier for use in an electrical conduit to prevent the flow of vapor through the conduit. The disclosed foamable cylindrical barrier may comprise an EVA copolymer and a sufficient amount of dicumyl peroxide to cause the barrier to foam. The Examiner contends that Klein's teaching of a foamable material for such a vapor barrier is analogous to the use of the recited coupling to secure a lamp. Applicants believe that this is incorrect, as a vapor barrier for a conduit is not the same or even similar to the attachment of a lamp in an assembly. Even if Klein is combined with either JP 59-121764 or DE 1958307, the result will not be what is presented in the present claims. The Examiner also contends that the use of microencapsulated blowing agents is well known. However, none of the cited documents refers to such blowing agents, still less their use in the particular composition used in the coupling, or their use in the coupling used for the claimed method.

Applicants respectfully traverse the rejection of claims 16-19, 24-31, 33-35, and 38-39 under 35 USC § 103(a) as unpatentable over either Japanese Publication No. 59-121764 (JP 59-121764) or German Publication No. 1958307 A (DE 1958307) in view of Klein (U.S. Patent No. 4,456,784) and further in view of Chang et al. (U.S. Patent No. 5,979,902), insofar as the rejection is applicable to the amended claims. (Applicants assume the reference to claim 33 was in error (as claim 33 has been withdrawn), and that the rejection should have been made to claims "34-35". Based on this assumption, the rejection of claim 33 has not been addressed.)

The deficiencies of the above cited documents are not resolved by the addition of Chang et al. Chang discloses the use of sealing articles comprising a driver composed of a crosslinked foamable polymer and a sealer comprising an uncrosslinked foamable polymer surrounding the driver. The sealing articles are useful in sealing cavities in automobile frame channels. In some applications, the driver and sealer are based on ethylene-vinyl acetate copolymer. The blowing agents of Chang are chemical blowing agents, not microencapsulated blowing agents, and there is no suggestion that such microencapsulated blowing agents could or should be used. While the foamable compositions of Chang may be able to withstand elevated temperatures for relatively short periods of time (e.g. between 115° and 250°C for 10 to 40 minutes, the time and temperature required for curing applied paint; see column 11, lines 12-23), the foam structure in these compositions would collapse on prolonged exposure to elevated temperatures for an extended period of time, such as 140°C for 2000 hours as is required by IEC standards to which lamps must comply. The compositions of Chang have a narrow useful time-temperature window for installation because exposure to high temperatures results in non-uniform cell structure. Furthermore, these foamable compositions would not be able to withstand exposure to commonly encountered hot and humid storage conditions, such as 45°C at 80% relative humidity for one week. As shown by the results in the specification, the use of microencapsulated blowing agents in compositions for couplings in the claimed method does provide unexpected advantages in terms of shelf life, rigidity, torque, bonding strength, and temperature stability over an extended period. See paragraphs [0047], [0050], [0052], [0056], and [0058].

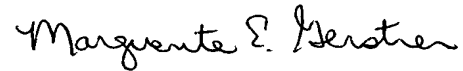
Restriction Requirement

Applicants confirm the election, without traverse, of the claims of Group I, i.e. claims 14-31, 34, 35, 38, and 39, for prosecution in this application. The claims of Group II, i.e. claims 32 and 33, have been withdrawn.

Conclusion

It is believed that this application is now in condition for allowance and such action at an early date is earnestly requested. If, however, there are any outstanding issues which can be usefully discussed by telephone, the Examiner is asked to call the undersigned.

Respectfully submitted,

A handwritten signature in cursive script, reading "Marguerite E. Gerstner".

Marguerite E. Gerstner
Registration No. 32,695
Telephone (650) 361-2483